JOURNAL

OF THE

PHYSICAL SOCIETY

OF JAPAN

Index

Volume 46, 1979

Published by the

PHYSICAL SOCIETY OF JAPAN

CONTENTS *of the* INDEX

Tables of Contents of Issues in Volume 46 I
Author Index for Papers in Volume 46 XV
Alphabetical Subject Index for Papers in Volume 46 XXXVII

BOARD OF EDITORS (1978–1979)

T. Oguchi (Chief Editor), S. Hoshino (Vice-Chief Editor), R. Abe, K. Adachi, K. Asayama, H. Fujiwara, A. Furusawa, N. Gō, E. Hanamura, S. Homma, J. Hori, S. Ichimaru, T. Iizuka, H. Ishizuka, H. Kamei, S. Kawaji, K. Kobayashi, T. Kotera, A. Kumada, Y. Matsunobu, K. Nagata, T. Ninomiya, T. Nomura, S. Sawada, T. Shimizu, H. Takami, K. Takayanagi, N. Takeuchi, Y. Tanabe, K. Tomita, H. Toyama, T. Tsushima, D. Watanabe.

A Elementary Particles, Cosmic Rays and Relativity
B Nuclei
C Statistical Mechanics and General Theory of Solids
D Low Temperature
E Magnetism
F Metals and Alloys
G Semiconductors and Insulators
H Dielectrics
I Transport Phenomena
J Lattice Defects and Surface Phenomena
K Optical Properties, Optics and Quantum Electronics
L X-Rays and Particle Rays: Scattering and Diffraction
M Atoms, Molecules and Molecular Biophysics
N Liquids and Polymers
O Plasma Physics
P Fluid Dynamics and Mathematical Methods
Q Other Topics

PHYSICAL SOCIETY OF JAPAN
ROOM NO. 211, KIKAI SHINKO BLDG.
3-5-8, SHIBA KOEN, MINATO-KU
TOKYO, 105 JAPAN

© Physical Society of Japan 1979
This Journal is partially supported by the Grant-in-Aid for Scientific Research from the Ministry of Education, Science and Cutture.

Table of Contents of Issue in Volume 46

No. 1

		Page
B	Statistical Theory Calculations of Neutron-Capture Cross-Sections at 24 keV ..... H. M. Agrawal and M. L. Sehgal	1
B	Gamma Deexcitation Mechanism of Rare-Earth Compound Nuclei Produced by (^{3}He, xn) and (α, xn) Reactions ..... Tadafumi Kishimoto, Shintaro Nakayama, Noriaki Takahashi and Hiroyasu Ejiri	6
E	Temperature and Frequency Dependences of ESR in EuB_6 Single Crystal and EuB_6 Bulk Poly-Crystal ..... Satoru Kunii and Tadao Kasuya	13
E	An Investigation of V^{2+} Impurity Center in $KMgF_3$ and $KZnF_3$ by ^{51}V-ENDOR Measurements ..... Hideo Takeuchi, Kazumi Horai and Masanori Arakawa	18
E	EPR Spectra of $Ni(BF_4)_2 6H_2O$ between 100 and 300 K ..... Walter Sano, Sadao Isotani, Jose Alberto Ochi and José Carlos Sartorelli	26
E	Inelastic Scattering of Neutrons from Random Two-Dimensional Antiferromagnets $Rb_2Co_cMg_{1-c}F_4$ ..... Hironobu Ikeda and Gen Shirane	30
E	Hyperfine Interactions in Pr_3Tl ..... Tateo Kobayashi, Masayuki Kawakami and Tadao Kasuya	40
E	Effective Nuclear Spin Hamiltonian for Magnetically Ordered Singlet Ground State System ..... Tsuyoshi Murao	36
E D	Antiferromagnetic Resonance in $CuCl_2 2NC_5H_5$ below 1 K ..... Kiichi Okuda and Kazuo Kadowaki	45
E L	Exchange Anisotropy of Ni-Ferrite Precipitates in Fe-Doped NiO ..... Kimihito Tagaya and Masaya Fukada	53
E L	Average Magnetic Moment of Mn Impurities in Ferromagnetic Ni-Co Alloys ..... Yoshihiro Shiozaki, Yutaka Nakai and Nobuhiko Kunitomi	59
F	A Study of Amorphous Pb-Si Alloys by Mössbauer Effect of $\times^7$Fe and X-Ray Diffraction ..... Hiromitsu Ino, Susumu Nanao and Takashi Muto	63
G	Photoconductivity Mechanism in Beta-Carotene Glass ..... Yasushi Hoshino and Kazuyoshi Tateishi	72
G	Pseudopotential Approach to Anisotropies of Compton-Profiles of Si and Ge ..... Hisashi Nara, Koichi Shindo and Teiji Kobayasi	77
G	Ultrasonic Study of Dynamic Behavior Jahn-Teller Distorted Cr^{2+} Centers in GaAs ..... Hiroshi Tokumoto and Takehiko Ishiguro	84
G I	Positronium in α-Quartz. I. Observed Temperature Dependence of the Positronium Effective Mass and the Probability of Annihilation from Singlet Positronium State ..... Hiroshi Ikari and Kunio Fujiwara	92
G I C	Positronium in α-Quartz. II. Possible Effect of Damping of Positronium Quasiparticle on the Momentum Distribution ..... Hiroshi Ikari	97
G I	Negative Magnetoresistance in the Anderson Localized States ..... Hidetoshi Fukuyama and Kei Yosida	102
G J	EPR Study of Ni^{2+}-Vacancy Dipoles in LiCl Crystals ..... Takeo Iri, Shin-ichi Hirako and Kenjiro Kambe	106
G J	Effects of Screening and Neutral Impurity on Mobility in Silicon Inversion Layers under Uniaxial Stress ..... Yasutami Takada	114
G K	Line Shapes of Zero Phonon and LO Phonon Assisted Luminescences Due to Free Excitons in KI and RbI Crystals ..... Hitoshi Nishimura, Yuuji Tanaka, Hisashi Miyazaki, Chiaki Ohhigashi and Masao Tomura	123
G K	Photoelectric Yield Spectra of K-, Rb- and Cs-Halides in the Photon Energy Range 10 to 40 eV ..... Hidenao Sugawara and Taizo Sasaki	132
H	Consideration of Lattice Vibrations in an Incommensurate Phase of Thiourea ..... Yoshihiro Ishibashi and Yutaka Takagi	143
H	Experimental Studies on Ferrielectricity in $RbLiSO_4$	

.....Yoshihiro Shiroishi and Shozo Sawada 148

H Comment on the Nonlinear Susceptibilities of AlN .....Takehiko Hidaka 154

H L X-Ray Study of Crystal Structures and Phase Transition in Ferroelectric Ammonium Fluoberyllate $(NH_4)_2BeF_4$ .....Akira Onodera and Yōichi Shiozaki 157

J G EPR Studies of Strong Jahn-Teller Coupling Systems $CdCl_2:Ag^{2+}$ and $CdBr_2:Ag^{2+}$ .....Takeshi Miyanaga 167

K Generalized Theory of Average Dielectric Constant and Its Application to Infrared Absorption by ZnO Small Particles .....Shinji Hayashi, Nobuyuki Nakamori and Hitoshi Kanamori 176

K G H Infrared Lattice Vibrations and Dielectric Dispersion in Antiferromagnetic Semiconductor $MnSe_2$ .....Seinosuke Onari and Toshihiro Arai 184

K M Resonant Raman Scattering in (E x e) Jahn-Teller System .....Shinji Muramatsu and Keiichiro Nasu 189

M Auger Electrons from Zinc and Cadmium Vapors by Proton and Alpha Particle Bombardments .....Hiroshi Kojima, Naoto Kobayashi, Nobuhiro Maeda and Masakatsu Sakisaka 198

M Total Cross Sections of Na Scattered by Different Gases .....Swati Ray and A. K. Barua 205

M Vibrational Excitation of H_2, D_2, N_2 and O_2 by Li^+ Impact in the Energy Range from 100 eV to 1200 eV .....Nobuo Kobayashi, Yoh Itoh and Yozaburo Kaneko 208

M The Radial and Rotational Coupling Terms between the Quasi-Molecular States of He_2^{++} .....Hiroshi Sato and Shunsuke Hara 215

N I P Critical Divergence of Ultrasonic Absorption in Critical Binary Mixtures of Triethylamine-Water .....Yoshifumi Harada 221

O Transit-Time RF Heating of Plasma Based on Fermi Acceleration .....Hideo Sugai, Kazuo Ido and Susumu Takeda 228

O Observation of Transit-Time Electron Hectron Heating by Localized RF Field .....Hideo Sugai, Masanori Sato and Susumu Takeda 235

O Spectroscopic Measurements of Impurities on the Upgraded DIVA Tokamak Plasma Satoshi Kasai, Akimasa Funahashi, masayuki Nagami, Tatsuo Sugie and Toshihiko Yamauchi 241

O Determination of Ion Temperature Distributions from Doppler Broadenings of Impurity Lines in the Vacuum UV Region for Tokamak Discharges Tatsuo Sugie 250

O Kinetic Effects on the Convective Plasma Diffusion and the Heat Transport .....Hiroshi Naitou, Tetsuo Kamimura and John M. Dawson 258

O Anomalous Transport Due to Electromagnetic Fluctuations across a Magnetic Field .....Toshio Tange, Sanae Inoue, Kimitaka Itoh and Kyoji Nishikawa 266

O Theory of the Parametric Oscillation in an Electron Beam-Plasma System .....Tomokazu Kato, Takashi Okazaki and Takashi Ohsawa 277

O Experimental Study of Shock-Heated Dense Plasma .....Seishiro Hashiguchi and Masaaki Inutake 285

O Geometrical Effects on Turbulent Diffusion of Toroidal Plasma .....Haruyuki Irié, Toshio Tange and Kyoji Nishikawa 293

P On the Developing Flow in a Channel .....Vijay K. Garg 300

P Kinetic Theory Treatment of Nonlinear Half-Space Problem of Evaporation and Condensation .....Yoshimoto Onishi 303

P Two-Dimensional Stagnation-Point Flow Impinging Obliquely on a Plane Wall .....Ko Tamada 310

P Nonlinear Partial Difference Equations. V. Nonlinear Equations Reducible to Linear Equations .....Ryogo Hirota 312

P The Lateral Force on a Small Sphere Sedimenting in a Viscous Fluid Bounded by a Cylindrical Wall .....Masaru Shinohara and Hidenori Hasimoto 320

Q Velocity of Ultrasound Wave in Mixed Gases (He-Ar, He-Xe) at High Pressure. .....Yoichi Hanayama 328

ERRATA

Magnetic Properties of $LaNi_{1-x}Fe_xO_3$ ($0 \leq x \leq 0.2$) [45(1978) 1417] .....
..Kichizo Asai, Hisashi Sekizawa, Koichi Mizushima and Shuichi Iida 334

LETTERS

B Energy Relaxation during the Fusion Process Probed by Preequilibrium Emission in Heavy-Ion Reactions .....
Toru Nomura, Hiroaki Utsunomiya, Takashi Inamura, Toru Motobayashi and Toru Sugitate 335

D NMR Study of ^{3}He Films Adsorbed on Grafoil .....
.....Kōzō Satoh and Tadashi Sugawara 337

E A Relation between the Faraday Rotation and Sublattice Magnetization of YIG
.....Haruki Toda and Yasuaki Nakagawa 339

G Ground State of Ga and Zn Impurities in Si .....
.....Toshiharu Hoshino and Katuhisa Suzuki 341

G J Optical Bleaching of V_2 and V_3 Bands in KI Crystals at 19 K .....
.....Takeyuki Okada 343

H Critical Region in the Specific Heat of Ferroelectric TGS .....
.....Kenji Ema, Katsumi Hamano and Yoshito Ikeda 345

H Logarithmic Anomaly in the Thermal Expansion Coefficients of Ferroelectric TGS
..Kenji Ema, Makiko Katayama, Yoshito Ikeda and Katsumi Hamano 347

H K Temperature Dependence of Raman Spectrum of $AgNa(NO_2)_2$ .....
.....Masanori Hangyo and Riso Kato 349

K Phonon Sidebands in Emission and Excitation Spectra for Ce^{3+} in CaS .....
.....Shigeru Yokono, Tomohiko Abe and Teruhiko Hoshina 351

M Electron Loss Cross Section of He^+ on He in 10-100 keV .....
.....Tatsuo Arikawa, Katsuya Narushima and Minoru Inoue 353

O Possibility of Lower-Hybrid-Drift Instability in Laser Produced Plasma in a Uniform Magnetic Field .....
.....Shigefumi Okada, Kohnosuke Sato and Tadashi Sekiguchi 355

O Numerical Analysis of Current-Driven Collisional Drift Instability in a Sheared Magnetic Field .....Ken-ichi Nishi-Kawa 357

P A Wronskian Representation of N-Solitons of Nonlinear Evolution Equations .
.....Junkichi Satsuma 359

No. 2

B High Spin States above the 8^+ Isomer in ^{88}Zr .....Toshio Numao, Hisayoshi Nakayama, Toshio Kobayashi, Toshi-Aki Shibata and Yoshitaka Kuno 361

C Lattice Vibrations and Heat Capacities of Solid Neon and Xenon .....
.....M. S. Kushwaha and S. S. Kushwaha 366

C E Theory of a Mixture of Two Anisotropic Antiferromagnets with Different Easy Axes. II .
.....Takuma Ishikawa and Takehiko Oguchi 372

C G Band Modification Caused by Impurities and Magnetophonon Effect.....
.....Satoru J. Miyake 377

C H On the Orders of Lineal Phase Transitions ..... Kêitsiro Aizu 384

C N P Second Moment of Director-Fluctuation in Electrohydrodynamic Instabilities of Nematic Liquid Crystal .....
Shoichi Kai, Manabu Araoka, Hideki Yamazaki and Kazuyoshi Hirakawa 393

C N P Autocorrelation and Power Spectrum of Director-Fluctuation in Electrohydrodynamic Instabilities of Nematic Liquid Crystal .....
Shoichi Kai, Manabu Araoka, Hideki Yamazaki and Kazuyoshi Hirakawa 401

D Oscillation of Orderparameter in the Nonequilibrium Superconductivity Caused by

Quasiparticle Injection ..... Masanori Sugahara 410
D Hall Effect in Lead Films near the Superconducting Transition Temperature . ..... Toyokazu Inoue, Shozo Miwa and Kiyomi Okamoto 418
D I J Theory of Hot Electrons on the Liquid ^{4}He Surface. II .... Takayuki Aoki and Motohiko Saitoh 423
E Crystal Growth, and Magnetic and Mössbauer Studies of $Sr(Fe_{0.766}W_{0.234})O_3$ and Its Related Compounds ..... Kenji Uchino and Shōichiro Nomura 432
E Electric and Magnetic Properties of an Organic Ion-Radical Salt: 1,1′-Diethyl-2,2′-Cyanine-$[TCNQ]_2$ .... Seishi Takagi and Kazuo Kawabe 440
E Neutron Scattering Study of a One-Dimensional Ising-Like Antiferromagnet $CsCoCl_3$. I. Instantaneous Correlation .... Hideki Yoshizawa and Kinshiro Hirakawa 448
E Neutron Scattering Study of a One-Dimensional Ising-Like Antiferromagnet $CsCoCl_3$. II. Spin Dynamics..... Kinshiro Hirakawa and Hideki Yoshizawa 455
E F Temperature Dependence of the Uniaxial Magneto-Crystalline Anisotropy Energy of Co ..... Fumihisa Ono and Osamu Yamada 462
E F Low Temperature Specific Heat of Itinerant Electron Ferromagnet Sc_3In .... Jun Takeuchi and Yoshika Masuda 468
E L Neutron and Mössbauer Studies of Atomic Magnetic Moments in a Turnary Alloy Fe-Co-Ni ..... Noboru Schibuya, Yutaka Nakai, Katsuhito Yamasaki and Nobuhiko Kunitomi 475
F Angular Correlation of Positron Annihilation Radiation from Single Crystals of Vanadium-Deuterium Alloys ..... Masayuki Hasegawa, Shu-ichi Koike, Makoto Hirabayashi, Hajime Asano and Toshiharu suzuki 481
F K Inner Core Photoelectron and Photoabsorption Spectra in Metals with Incomplete Shell ..... Akio Kotani 488
G Optical Absorption and Infrared Photoconductivity in Amorphous Si-Au System ..... Naoki Kishimoto and Kazuo Morigaki 497
G Self — Trapping in mixed Crystal-Clustering, Dimensionality, Percolation —.. ..... Yuzo Shinozuka and Yutaka Toyozawa 505
G Doping Effect in Chalcogenide Glasses ..Tsuyoshi Uda and Eizaburo Yamada 515
G The Crystal Binding Energies of the IV-VI Semiconductors .... Hiroshi Tanaka and Akira Morita 523
G The Transverse Effective Charges of the Iv-VI Semiconductors .... Hiroshi Tanaka and Akira Morita 530
G Net Charge of Electron-Hole Drops in Pure and Doped Ge .... Tadaki Ugumori, Kazuo Morigaki and Chieko Nagashima 536
G K Resonant Brillouin Scattering by LA Phonons in CdS ....Yasuo Itoh, Kikuo Yamabe, Sadao Adachi and Chihiro Hamaguchi 542
G K Energy Transfer Due to Excitons and Holes under Host-Sensitization in NaCl: Br ..... Minoru Itoh and Yoshio Nakai 546
G K Bound Multiexciton Luminescence in Boron-Doped Silicon: Excitation-Level Dependence and Recombination Kinetics ..... Hiroshi Nakayama, Ken-ichi Ohnishi, Hirotoshi Sawada, Taneo Nishino and Yoshihiro Hamakawa 553
H Pyroelectric and Dielectric Properties of $Rb_2Cd_2(SO_4)_3$ ..... Noboru Yamada 561
H Elastic Properties of $Ca_2Sr(C_2H_5CO_2)_6$ .... Hiroshi Kameyama, Yoshihiro Ishibashi and Yutaka Takagi 566
H E-Symmetry Raman Spectra of KH_2PO_4 .... Yasunori Tominaga, Terutaro Nakamura and Masayuki Udagawa 574
H Dielectric and Dilatometric Studies of Phase Transitions in $(ND_4)_3D(SeO_4)_2$ and Isotope Effect ..... Toshio Osaka, Yasuharu Makita and Kazuo Gesi 577
H L X-Ray Crystal Structure Analysis of Low Temperature Phase of $SrTiO_3$ .... Toshio Osaka, Yasuharu Makita and Kazuo Gesi 581
I Electrical Conduction in C-Direction of Highly Crystalline Graphites in Relation to Structural Perfection ..... Kiyoshi Kawamura, Yoshiaki Ouchi, Hisashi Oshima and Takuro Tsuzuku 587

J N Dissociation of an Edge Dislocation in Sodium Chloride with High Density of Dislocation ..... Toru Matsuo and Hideji Suzuki 594
K Soft-X-Ray Absorption and Electronic Structure of Al 3d-Transition Metal Alloys ..... Takaaki Hanyu, Shigeo Yamaguchi, Hideaki Koike and Shigeru Sato 599
K H A Test of Centrosymmetry of the Hexagonal Phase in K_2SeO_4 Kuon Inoue, Kenji Suzuki, Akikatsu Sawada, Yoshihiro Ishibashi and Yutaka Takagi 608
L M Phase Transitions in Bilayer Membranes of Dioleoyl-Phosphatidychlorine, Dipaltimoyl-Phosphatidylcholine ..... Kishio Furuya and Toshio Mitsui 611
L N Quasi-Elastic Neutron Scattering Study of Aqueous Solutions of $FeCl_3$, $NiCl_2$ and $MgCl_2$ ..... Takashi Sakuma, Sadao Hoshino and Yasuhiko Fujii 617
M Single-Center Secular Equations in the MS-Xα Method ..... Pancracio Palting and Shinichi Katsuki 623
M Anisotropy of T_{1D} and $T_1\rho$ of Tetrahedrally coordinated Four-Spin-1/2 System ..... Kunihiko Morimoto, Kenji Shimomura and Makoto Yoshida 627
N G Electrical Resistivity of Liquid Te, Ga_2Te_3, In_2Te_3 and Tl_2Te under High Pressure ..... Kozaburo Tamura, Masao Misonou and Hirohisa Endo 637
O Nonlinear Damping of Electron Plasma Oscillations ..... Takashi Okazaki and Tomokazu Kato 643
O Resonance Absorption of Laser-Energy in a Magnetized Target-Plasma ..... Hiroatsu Maki and Keishiro Niu 653
O Acoustic Turbulence Trapped in the Modulated Langmuir Wave and Its Effect on the Collapse ..... Ken Kogiso, Mitsuo Kono and Nobuo Yajima 659
P Statistical Approach to Inhomogeneous Turbulence with Unidirectional Mean Flow: Evaluation of Reynolds Stress ..... Akira Yoshizawa 669
P Viscous Flow past Multiple Planar Arrays of Small Spheres .... Katsuya Ishii 675
P Periodic Wave and Rational Soliton Solutions of the Benjamin-Ono Equation. ..... Junkichi Satsuma and Yuji Ishimori 681

ERRATA

Sidebands on EPR Lines in Low-Dimensional Systems [45(1979) 826] ..... Tsutomu Komatsubara and Kazukiyo Nagata 688

LETTERS

E Microscopic Origin of the Metamagnetic Transition in $Co(S_xSe_{1-x})_2$—^{59}Co NMR ..... Hiroshi Yasuoka, Nozomu Inoue, Masaaki Matsui and Kengo Adachi 689
E I Pressure Effect on the Resistivity Minimum in $(\underline{Cr_{92}V_8})$-1.0 at. % Fe Alloy .. .. Susumu Katano and Nobuo Mōri 691
G Optical Detection of ESR in Amorphous As_2S_3 ..... Hironari Suzuki, Kazuro Murayama and Toshiyuki Ninomiya 693
H Hydrostatic Pressure Effect in the Phase Transition of $K_2Mn_2(SO_4)_3$ ..... Tomoyuki Hikita, Makoto Kitabatake and Takuro Ikeda 695
L H Neutron Scattering Study on the Incommensurate Phases in Ferroelectric Rb_2ZnCl_4 and K_2ZnCl_4 ..... Kazuo Gesi and Masashi Iizumi 697
N O Dependences of the Fastest Growing Williams Mode on an Applied Field in Electrohydrodynamics ..... Shoichi Kai, Tsuyoshi Kai and Kazuyoshi Hirakawa 699
O A Rigorous Criterion for a Radial Distribution Function in a Two-Component Plasma ..... Mitsuaki Ginoza 701

No. 3

A Theory of the Detection of Continuous Gravitational Radiation .....

.....Masa-Katsu Fujimoto and Hiromasa Hirakawa 703
B The D(d, d)D, D(d, p)T and D(d, ^{3}He)n Reactions at 13.2 MeV .....
Akira Okihana, Noboru Fujiwara, Hitoshi Nakamura-Yokota, Takuji Yanabu, Kiyoji Fukunaga, Takao Ohsawa and Seiji Tanaka 707
B The E5 Transition in $^{117}Sn^m$ .....
.....Yoshiaki Kato, Kazumasa Miyano and Yasushi Kawada 715
C Experimental Study on Chemical Turbulence. II .....
.....Hideki Yamazaki, Yoshitsugu Oono and Kazuyoshi Hirakawa 721
C E Statistical Theory of the Random Ordered Phase in the Site Model .....
.....Takehiko Oguchi and Yohtaro Ueno 729
C G Multi-Valley Effective Mass Theory .....Fusayoshi J. Ohkawa 736
C N P Damped Oscillation of Current and Successively Excited Flow-Patterns in the Electrohydrodynamic Instability of Nematic Liquid Crystal MBBA .....
.....Hidetoshi Miike and Yoshio Ebina 744
C P Hydrodynamic Equations from Fokker-Planck Equations — Multiple Time Scale Method — .....Toyonori Munakata 748
D Critical Current Densities in the Surface Pinning Region of a Superconducting Pb-20Tl Rod .....Teruo Matsushita, Toshirou Tanaka and Kaoru Yamafuji 756
D On the Magnetization of a Nonideal Type 2 Superconductor .....
.....Teruo Matsushita and Kaoru Yamafuji 764
D Fluctuation-Induced Conductivity above the Superconducting Transition Temperature in Indium Films Containing Gadolinium Impurities .....
.....Atsushi Nakagawa, Takashi Koguchi and Kiyomi Okamoto 772
E Magnetic Properties of (Mn, Cr)P and (Mn, Fe)P Compounds .....
.....Nobuo Iwata, Hironobu Fujii and Tetsuhiko Okamoto 778
E On the Magnetic Resonance in Low-Dimensional Dense Paramagnets .....
.....Ad Lagendijk 784
E Triangular Spin Ordering in Mn_3Sn and Mn_3Ge .....Takeo Nagamiya 787
E Mössbauer Study on the Structural and Magnetic Properties of Amorphous BaO-Fe_2O_3-B_2O_3 System .....
.....Yasuhiko Syono, Atsuko Ito and Osamu Horie 793
E Magnetic and Crystallographic Studies on MnAs Substituted by P or Sb ....
Satoshi Haneda, Yasuo Yamaguchi, Hiroshi Watanabe and Noriaki Kazama 802
E F Zero Sound Anomaly in a Ferromagnetic Invar Alloy $Fe_{65}Ni_{35}$.....
.....Yasuo Endoh and Yasuhisa Noda 806
F Positron Annihilation in ReO_3 .....
.....Takashi Akahane, Toshinobu Chiba and Nobuo Tsuda 815
E F J A Calculation of the Electronic Structure of an Interstitial and a Substitutional Impurity Atom of Boron in Ferromagnetic Nickel .....
.....Hiroshi Katayama, Kiyoyuki Terakura and Junjiro Kanamori 822
F E I Frequency-Dependent Electrical Conductivity of Nearly and Weakly Ferromagnetic Metals — Deviations from Drude's Formula —.....Hideo Hasegawa 831
G Oxygen Induced Photoconductivity in Lead Phthalocyanine .....
.....Hitoshi Yasunaga, Kenichi Kasai and Kenichi Takeya 839
G I Metal-Nonmetal Transition in Amorphous Si-Au System at Low Temperatures: Measurements of Electrical Conductivity and Thermoelectric Power .....
.....Naoki Kishimoto and Kazuo Morigaki 846
G J Interference Effects of Γ and X Electric-Break-Throughs in Inversion Layers of Si .....Fusayoshi J. Ohkawa 855
H Isomorphism of Cole-Cole Dispersion Function and Its Representation .....
.....P. H. Fang 861
H Condensed Phonon Modes in Successive Phases of WO_3 .....
.....Masaru Kawaminami and Toshikazu Hirose 864
H Pressure-Induced Ferroelectricity in $Ca_2Ba(C_2H_5CO_2)_6$ (DBP) .....
.....Akikatsu Sawada, Tomoyuki Kikugawa and Yoshihiro Ishibashi 871
H Temperature Dependence of Complex Dielectric Constant of TGS Powders ...
.....Tomomasa Emoto, Hiroshi Motegi and Eiji Nakamura 876
J Plastic Flow in bcc ^{3}He .....
.....Akira Sakai, Yasushiro Nishioka and Hideji Suzuki 881

J Br_2^- Molecular Ions in Simple Cubic CsBr .....Yoshifumi Ueda, Toshiaki Fujita, Yukio Kazumata and Masato Nishi 889
K Piezo-Optical Study of Graphite in 3 to 6 eV Range.....Hirohito Fukutani and Goro Kuwabara 893
K Triplet Absorption and Phase Transition in $AgNa(NO_2)_2$.....Masanori Hangyo and Riso Kato 902
K E Zeeman Effect of R-Lines in Ruby under a High Magnetic Field .....Hidenobu Hori, Hiroshi Mollymoto and Muneyuki Date 908
L H X-Ray Study of Phase Transitions in $SC(NH_2)_2$.....Hisataka Takenaka, Hikaru Terauchi and Asako Kawamori 914
M Charge Changing Collisions of Atomic Beams in Alkali-Metal Vapors. I. Formation of H^-, C^-, O^- and S^- Ions .....Tetsuo Nagata 919
M Charge Transfer Processes Involving Highly Excited Hydrogen Atoms. I. The Born Amplitude in a Closed Form.....Nobuyuki Toshima 927
M The Effect of Methyl Groups on the Optical Absorption of Retinal .....Hideo Suzuki, Hiroki Kitajima and Ken Ishikawa 937
M Theory of Formamide and Its Related Compounds by INDO-CI Method .....Masanori Sakuranaga, Kei Nakachi and Hideo Suzuki 944
O Excitation and Nonlinear Phenomena of Flute Instability in a Q-Machine Plasma .....Yoshiaki Hioki and Takayoshi Okuda 952
O Computational and Experimental Studies on Spontaneous Magnetic Field Generation Associated with Laser-Produced Plasmas in Vacuum .....Noboru Nakano and Tadashi Sekiguchi 960
O Plasma Flow and a Soliton in a Theta Pinch .....Kazuhiro Nozaki and Tosiya Taniuti 970
O Complementary Variational Principles on Electrical Conductivities of a Plasma in a Uniform Magnetic Field .....Shobu Kaneko 975
O P Solitons in a Convective Motion of a Low-β Plasma.....Kazuhiro Nozaki, Tosiya Taniuti and Kunihiko Watanabe 983
O Solitons in a Convective Motion of a Low-β Plasma. II .....Kazuhiro Nozaki, Tosiya Taniuti and Kunihiko Watanabe 991
P Natures of Steady Motions in One-Dimensional Nonlinear Lattices .....Takayasu Tanaka 1002
P O Soliton Solutions of the Derivative Nonlinear Schrödinger Equation .....Tutomu Kawata, Nobuyuki Kobayashi and Hiroshi Inoue 1008
P O Two-Time Correlation Function of the Time-Dependent Ideal Random Function Masaaki Doi, Ryouichi Kambe, Tsutomu Imamura and Tosiya Taniuti 1016

ERRATA

Divertor Experiment for Impurity Control in DIVA[45(1978) 1385] .....Seio Sengoku, Masayuki Nagami, Hikosuke Maeda, Satoshi Kasai, Toshihiko Yamauchi, Tatsuo Sugie, Haruyuki Kimura and Kazumi Ohasa 1022

ADDENDA

G Thermal Expansion Coefficient at the High Temperature and Optical Mode Grüneisen Constants of Si and Ge .....Toshinobu Soma and Kinya Kudo 1023
L A New Result with a Two Crystal Component Neutron Interferometer ..... Seishi Kikuta, Toshio Takahashi, Kan Nakayama, Yasuhiko Fujii and Sadao Hoshino 1024

LETTERS

B Angular Momentum Transfers in Equilibrium and Pre-Equilibrium Dy(α, xn γ) Reaction

Yasuki Nagai, Tokushi Shibata, Hideyuki Sakai, Tadafumi Kishimoto and Hiroyasu Ejiri 1025

E Anomalous Behaviour of an AC Susceptibility in a Random Magnet, $NiMg_{(1-)}(OH)_2$. ..... Toshiaki Enoki and Ikuji Tsujikawa 1027

E Magnetic Properties of VO_x ..... Tsukio Ohtani, Koji Kosuge and Sukeji Kachi 1029

E High Field Magnetization of a Heisenberg Ferrimagnet $Mn(CH_3COO)_2 \cdot 4H_2O$ .. Motohiro Matsuura, Yuichi Okuda, Masaki Morotomi, Hiroshi Mollymoto and Muneyuki Date 1031

E Electric Shift in the Antiferromagnetic Resonance and the Mechanism of the Parallel Magnetoelectric Effect of Cr_2O_3 ..... Eiji Kita, Kiiti Siratori and Akira Tasaki 1033

E H K^{39} Spin-Lattice Relaxation Time in KH_2PO_4 Measured by a Technique Based on Nuclear-Double-Resonance ..... Masakazu Kunitomo 1035

J L Anomalous Temperature Dependence of Lattice Constant in Silicon Crystals . Yoshifumi Suzuki, Shinya Hosogi, Hirofumi Sakashita, Nobuhiko Ohama and Atsushi Okazaki 1037

L Compression of the Sputtered NaCl-Type InSb ..... Katsuyuki Asaumi and Shigeru Minomura 1039

M Rotational Excitation of n-H_2 by Li^+ Impact in the Energy Range from 150 eV to 750 eV . ..... Yoh Itoh, Nobuo Kobayashi and Yozaburo Kaneko 1041

O Numerical Analysis of Current-Driven Collisional Drift and Alfvén Instabilities in a Sheared Magnetic Field ..... Ken-ichi Nishi-kawa 1043

P Equilibrium Amplitude of a Non-Axisymmetric Wave in the Flow through a Circular Pipe ..... Choji Nakaya 1045

No. 4

A Theoretical analysis of the Effect of the Size Fluctuation on the Size Spectrum of Extensive Air Showers ..... Takeshi Sugihara and Hiroshi Oda 1047

B Level Structure of ^{124}Te .....A. K. Sharma, Ravinder Kaur, H. R. Verma, K. K. Suri and P. N. Trehan 1057

B Decay of ^{189}Re ..... Masanobu Sakaguchi, Tsutomu Tamura and Zyun-Itiro Matumoto 1067

C E Critical Phenomena in the Two-Dimensional Random Ising System. I ..... Fumiaki Shibata and Motoko Asou 1075

C E Critical Phenomena in the Two-Dimensional Random Ising System. II. ..... Motoko Asou and Fumiaki Shibata 1083

C F Percolation Approach to the Metal-Insulator Transition in Super-Critical Fluid Metals. II. Quantal Percolation Approach ..... Takashi Odagaki, Naofumi Ogita and Hirotsugu Matsuda 1087

C I Photo-Magneto-Electric Effect in Semimetals ..... Kazuo Nakazato 1092

D Current-Voltage Characteristics of Randomly Pinned Type II Superconductors. ..... Teruo Matsushita, Eiichirou Kusayanagi and Kaoru Yamafuji 1101

D Nonlinear Current-Voltage Characteristics in Dilutely Pinned Superconductors ..... Teruo Matsushita 1109

D Upper and Lower Critical Fields of TaS_2 $(Pyridine)_{12}$ ..... Yasuharu Kashihara, Akihiko Nishida and Hide Yoshioka 1112

D J Temperature and Frequency Dependence of the Sound Velocity in hcp ^4He Crystals ..... Izumi Iwasa, Keisuke Araki and Hideji Suzuki 1119

E A New Ferromagnetic Spinel System $Ni(Rh_{1-x}Cr_x)_2S_4$ $(0.15 \leqslant x \leqslant 0.40)$ with Metallic Conduction ..... Hiroki Itoh 1127

E Antiferromagnetism and Weak Ferromagnetism of Disordered bcc Cr-Mn Alloys ..... Seijiro Maki and Kengo Adachi 1131

E Magnetic and Crystallographic Study on the Electronic State of Interstitial Cations in MnSb ..... Yasuo Yamaguchi and Hiroshi Watanabe 1138

E Polarized Neutron Diffraction Study of $CuCr_2Se_4$ Single Crystal .....

Yasuo Yamaguchi, Isao Nakatani, Hiroshi Watanabe and Katashi Masumoto 1145
E Neutron Scattering Investigation of Static Critical Phenomena in the Two-Dimensional Antiferromagnets: $Rb_2Co_xMg_{1-x}F_4$ .....Hironobu Ikeda, Masatsugu Suzuki and Michael T. Hutchings 1153
E C Longitudinal Ultrasonic Attenuation in Anisotropic Itinerant Electron Ferromagnets .....Makoto Isoda 1161
E H C The Random Ising Model with a Term Corresponding to a Transverse Field .....Kazuo Hattori 1170
F Concentration Modulation and Stability of Long Period Superlattice in the Off-Stoichiometric Cu-Au Alloys .....Mitsuo Kataoka 1176
F Positron Annihilation Study on the Fermi Surface of Cd-Mg Alloys .....
Shu-ichi Koike, Masayuki Hasegawa, Makoto Hirabayashi and Toshiharu Suzuki 1185
F J Cluster Model for Electronic Structure and Bonding Mechanism of Interstitial Hydrogen in Iron Series Transition Metals .....Hirohiko Adachi and Shosuke Imoto 1194
F L Experimental and Monte Calro Studies of Multiple Scattering Correction in the Compton Profile of Aluminum .....Fumitake Itoh, Toshihisa Honda and Kenji Suzuki 1201
G I Galvanomagnetic properties of n-Type InSb at Low Temperatures. III. Transport in the Band Tailing and Hopping between Donors in the Magnetic Freeze-Out Regime .....Shuichi Ishida and Eizo Otsuka 1207
G K Phonon Structures of Forbidden-Indirect Transitions in TlCl and TlBr .....
Atsuhiro Fujii, Jun'ichirō Nakahara, Koichi Kobayashi and Yasuhiko Fujii 1218
H Anomalous Temperature Dependence of D Tensor in the ESR Spectrum of Fe^{3+} Ions Doped in KDP and DKDP Crystals .....Kazuaki Tsuchida and Ryuji Abe 1225
H Another Pattern of Incommensurate Modulation in a Substance like Ammonium Rochelle Salt. Its Relationship to Incommensurate Ferroelectricity ..... Keitsiro Aizu 1232
H Optical and Dilatometric Studies of $KCaCl_3$ and $RbCaCl_3$ Crystals .....Michio Midorikawa, Yoshihiro Ishibashi and Yutaka Takagi 1240
H Electron Paramagnetic Resonance Investigation of Phase Transition in $RbCdF_3$ .....Masanori Arakawa 1245
H Electron Spin Resonance of VO^{2+} in $(NH_4)_2SeO_4$ .....Vimal Kumar Jain 1250
H J Computational Method of Activation Energy of Thick Domain Walls .....Yoshihiro Ishibashi 1254
H J Effect of Surface Layers on the Coercive Field, Spontaneous Polarization and Dielectric Constant of Triglycine Selenate .....Abhai Mansingh and Gulshan Rai 1258
I E F Resistivity Minimum in Antiferromagnetic Cr-Fe Alloys .....Susumu Katano and Nobuo Môri 1265
K A Method for Solving Combined Spin-Orbit and Jahn-Teller Coupling and Application to $^4T_2$ of $KMgF_3$: V^{2+} .....Shinji Muramatsu and Nobuhiko Sakamoto 1273
K M Saturation Effects of a Two-Level System in Two RF FieldsNoriaki Tsukada 1280
M Dissociative Recombination of H_2^+, HD^+ and D_2^+ Molecular Ions .....K. Rai Dastidar and T. K. Rai Dastidar 1288
M Charge Transfer Processes Involving Highly Excited Hydrogen Atoms. II. Numerical Results by the Born Approximation .....Nobuyuki Toshima 1295
M Charge Changing Collisions of Atomic Beams in Alkali-Metal Vapors. II. Total Cross Sections for One-Electron Capture by C^+, O^+, S^+ Ions and C, O, S Atoms ..... Tetsuo Nagata 1302
M Theory of the Optical Absorption of β-Carotene .....Tohru Sugimoto, Katsuyuki Nakano, Hiroki Kitajima and Hideo Suzuki 1307
M O K Optical Satellites of Langmuir Turbulence .....Yō Mizuta and Akiko Ohno 1315
N Theory of Twisted Stiff Chains. I .....Akira Miyake and Yoshiaki Hoshino 1324
O Numerical Simulation of Lower Hybrid Wave Propagation in a Plasma .....

Masao Okamoto, Masafumi Azumi, Tomonori Takizuka and Atsushi Fukuyama 1333
O Three-Dimensional Propagations of Electron Bernstein Waves Toshiro Ohnuma, Shingo Ohmori, Shigeo Ohnuki, Saburo Adachi, Takao Fujita, Koichi Hirayama and Yutaka Ogiwara 1340
P Interaction between a Shock-Heated Plasma and a Nozzle-Shaped Magnetic Field ..... Noriaki Gohda 1346
P Statistical Approach to Inhomogeneous Turbulence with Unidirectional Mean Flow. II. Mean Velocity Profile in a Channel Flow ..... Akira Yoshizawa 1354
P An Exact Gaussian Solution for Two-Dimensional Incompressible Inviscid Turbulent Flow ..... Masaaki Doi and Tsutomu Imamura 1358
P Numerical Study on Bifurcating Flow of a Viscous Fluid ..... Mitutosi Kawaguti and Akiko Hamano 1360
P O An Interferometric Study of the Shock-Reflection Process in Ionizing Krypton ..... Hiromichi Ezumi 1366

LETTERS

B Exact Finite-Range DWBA and Adiabatic-Deuteron-Breakup Calculations Including the Deuteron D-State for the ^{58}Ni(p, d)^{57}Ni Reaction at 52 MeV ..... Norio Kishida and Hajime Ohnuma 1375
C Universal Plot of the Ratio of Sound Dispersion to Attenuation for Critical Fluids ..... Kazu Nishigaki 1377
D E Thermal Properties of $(Ti_{0.99}V_{0.01})_2O_3$: a Spin Glass ..... Yoshihito Miyako, Toshikazu Satō, Yoshihide Kimishima and Y. G. Yuochunas 1379
E Observation of the Antiferromagnetic Order in Metallic Compounds V_3S_4 and V_3Se_4 ...Yoshio Kitaoka, Hiroshi Yasuoka, Yoshio Oka, Koji Kosuge and Sukeji Kachi 1381
E Mössbauer Effect of Fine-Powdered $Fe_{76}Pt_{24}$ Invar Alloy ..... Toshihiko Shigematsu, Kenji Sumiyama, Yoji Nakamura and Sukeji Kachi 1383
G K Resonant Forbidden Brillouin Scattering in CdS ..... Sadao Adachi and Chihiro Hamaguchi 1385
H Phase Transition in $Sr_2Nb_2O_7$ at 215°C .....Kikuo Ohi, Masakazu Kimura, Haruhisa Ishida and Hiroaki Kakinuma 1387
H Elastic Anomalies of Rb_2ZnCl_4 around the Normal-Incommensurate Phase Transition Point .....Shunsuke Hirotsu, Kiyoshi Toyoda and Katsumi Hamano 1389
H L Lattice Distortion of $PbZrO_3$ ..... Hideshi Fujishita, Yōichi Shiozaki and Etsuro Sawaguchi 1391
L Orientation of Pyridine in $TaS_2(Py)_{1/2}$ .....Yasuharu Kashihara, Akihiko Nishida, Ken-ichi Ohshima, Jimpei Harada and Hide Yoshioka 1393
M Transformation of Nonlinear Oscillators to Neutral Equations ..... Kazuaki Narita 1395
M New Oscillatory Structures of Ne_2 and Ar_2 Emission Continua in the Vacuum Ultraviolet .....Yoshio Matsuura and Kuniya Fukuda 1397
M Vibrational Excitation of NO by Li* Impact from 100 eV to 1200 eV ..... Yoh Itoh, Nobuo Kobayashi and Yozaburo Kaneko 1399
P Propagation of Circular Solitary Wave on Shallow-Water ..... Isao Tsukabayashi and Takashi Yagishita 1401

No. 5

A Photoproduction of Positive and Negative Pions from Protons in the Energy Range from 710 MeV to 950 MeV ..... Koichi Maruyama, Hirofumi Fujii, Saburo Homma, Hideki Okuno, Nobuyuki Yamashita, Ichiro Arai, Hirokazu Ikeda and Akifumi Itano 1403
C Roton Spectrum of Condensed Bose Systems .....Masakazu Ichiyanagi 1412

C Incommensurate-Commensurate Crossover in Generalized One-Dimensional Ginzburg-Landau Fields ..... Yukio Okwamoto, Hajime Takayama and Hiroyuki Shiba 1420

C Spin-One Ising Model with Bilinear and Biquadratic Interactions ..... Kazuhiro Takahashi and Motoyuki Tanaka 1428

C F Effects of Impurity Pinning on Commensurate Charge-Density-Wave State and Incommensurate-Commensurate Transition ..... Kazuo Nakanishi 1434

D E I Transport Properties in a Kondo Superconductor ..... Kazuyuki Matsui and Yoshika Masuda 1444

E A Theory of Nearly Ferromagnetic Semiconductors ..... Yoshinori Takahashi and Tōru Moriya 1451

E Magnetic Relaxation Phenomena near T_N in $Co(HCOO)_2 2H_2O$ ..... Shingo Ikeda and Taiichiro Haseda 1460

E Specific Heat Measurement on a Random Mixture of Two Antiferromagnets with Competing Anisotropies ..... Makoto Kobayashi, Koichi Katsumata, Toshikazu Satō and Yoshihito Miyako 1467

E Further Investigations on Magnetic Properties of $Co(S_xSe_{1-2})_2$, $(0 \leqslant x \leqslant 1)$ ..... Kengo Adachi, Masaaki Matsui and Masahiro Kawai 1474

E Electron Paramagnetic Resonance Studies of Gd^{3+} in $KZnF_3$ and $KCdF_3$ ..... Masanori Arakawa, Hiroshi Ebisu, Taturu Yosida and Kazumi Horai 1483

E F Magnetic Properties of $Pr_{1-c}La_cAl_2$ ..... Shigeho Tanigawa, Takashi Tsuchida and Yoji Nakamura 1488

E F NMR Study of Ferromagnetism in $V(Ir_{1-x}Pt_x)_3$ ..... Masayuki Kawakami and Takao Goto 1492

E F Calculation of the Magnetic Properties for fcc Fe−Ni Alloys ..... Jun-ichiro Inoue, Hideji Yamada and Masao Shimizu 1496

E F Single-Site Functional-Integral Approach to Itinerant-Electron Ferromagnetism ..... Hideo Hasegawa 1504

F I J Deviations from Matthiessen's Rule of the Electrical Resistivity Due to Dislocations in Gold ..... Toshiro Endo and Takao Kino 1515

G Negative Magnetoresistance in the Anderson Localized States. II. Effect of Electron Correlations ..... Hidetoshi Fukuyama and Kei Yosida 1522

G C Theory of Shallow Donor States in Silicon — Substitutional Donors — ..... Fusayoshi J. Ohkawa 1529

G J Jahn-Teller Type Self-Trapping of Holes in Mixed Crystals $AgBr_{1-x}Cl_x$ ..... Mitsuo Yamaga and Hide Yoshioka 1538

G K Quasi-Static Analysis of Resonant Brillouin Scattering in ZnSe, ZnTe and CdS. ..... Sadao Adachi, Yasuo Itoh and Chihiro Hamaguchi 1546

G K Time-Resolved Absorption Spectroscopy of Self-Trapped Excitons in Condensed Ne, Ar, and Kr ..... Tohru Suemoto and Hiroshi Kanzaki 1554

H ESR Study of Ferroelastic Phase Transition in $KH_3(SeO_3)_2$ Doped with Cr^{3+}. ..... Kazumi Niimori, Yasutoshi Nakagawa and Kenzi Hukuda 1563

H Electron Paramagnetic Resonance Investigation of Successive Phase Transitions in $KCdF_3$ ..... Masanori Arakawa and Hiroshi Ebisu 1571

H Electric Conductivity of Ferroelectric $Pb_5Ge_3O_{11}$ ..... Yoshihiro Gotō and Etsuro Sawaguchi 1580

H L Domain Formation in Ferroelectric $BaTiO_3$ Studied by X-Ray Topography. I. ..... Noriyuki Akaba, Shigeo Suzuki and Mieko Takagi 1583

I D Bion Dissociation in Sine-Gordon System ... Masahiro Inoue and S. C. Chung 1594

J K Surface Phonon Modes of a Microcrystal SlabShinji Hayashi, Junzo Hirono, Hitoshi Kanamori and Raphael Ruppin 1602

L Variation of the Yield of Photoelectrons Emitted from a Silicon Single Crystal under the Asymmetric Diffraction Condition of X-Rays ..... Toshio Takahashi and Seishi Kikuta 1608

L E Polarized Neutron Diffraction Study of Fe_2P Single Crystal ..... Hironobu Fujii, Shigehiro Komura, Takayoshi Takeda, Tetsuhiko Okamoto, Yuji Ito and Jun Akimitsu 1616

M Charge Changing Collisions of Atomic Beams in Alkali-Metal Vapors. III. Formation of

H(2s) Atoms from H^+ Ions ..... Tetsuo Nagata 1622
M Ionizing Collisions of Long-Lived Highly Excited Hydrogen Molecules with H_2O and SF_6 ..... Hisato Hiraishi, Tamotsu Kondow, Tsutomu Fukuyama and Kozo Kuchitsu 1628
O Origin of Metal Impurities in DIVA ..... Kazumi Ohasa, Hikosuke Maeda, Shin Yamamoto, Masayuki Nagami, Hideo Ohtsuka, Satoshi Kasai, Kazuo Odajima and Haruyuki Kimura 1635
O Fast Cyclotron Wave Excitation in a Spiral Electron Beam-Plasma System ... . Toshitaka Idehara, Mataharu Tanaka and Yoshio Ishida 1641
O Whistler Wave Trapping in a Narrow Density TroughHideo Sugai, Kazuo Ido, Hiroshi Niki, Susumu Takeda and Kunioki Mima 1647
O P Method of Conservation Laws for Solving Nonlinear Schrödinger Equation ... . Shinsuke Watanabe, Makoto Miyakawa and Nobuo Yajima 1653

ERRATA

Non-Linear Mechanical Model for Martensitic Transformation [45(1978) 860] ..... Tetsuro Suzuki 1660

LETTERS

E EPR of Several Iron-Group Impurities in $LiBaF_3$ Having Inverse Perovskite Structure Taturu Yosida, Hiroaki Aoki, Hideo Takeuchi, Masanori Arakawa and Kazumi Horai 1661
E A Possible Model for the Weak Ferromagnetism of NiS_2 ..... Akio Yoshimori and Hisao Fukuda 1663
E Low Temperature Thermal Expansion of $Fe_{72}Pt_{28}$ Invar Alloy ..... Yoshitoshi Muraoka, Shigehiro Kimura, Masayuki Shiga, Kenji Sumiyama and Yoji Nakamura 1665
E F NMR Study on Ferromagnetism and Spin Glass in Ternary $(PdCo\ 0.4\%)_{1-x}Mn_x$ Alloys ..... Akito Sakemoto, Ken-ichi Kumagai and Kunisuke Asayama 1667
G Electronic Band Structure of Superlattices in Magnetic Fields .... Kenji Nakao 1669
J Cluster Model Investigation of Chemisorptions for Chalcogens on Nickel ..... Hirohiko Adachi 1671
L Incommensurate Jahn-Teller Phase Transitions in $Tl_2PbCu(NO_2)_6$ and $Rb_2PbCu(NO_2)_6$ ..... Masahiro Mori and Yasusada Yamada 1673
O Broken Ambipolarity of Diffusion in Drift Wave Turbulence ..... Kanemitsu Kato and Kunioki Mima 1675
O Coupling of Electron Plasma Waves between Two-Temperature Mode and Higher-Order Landau Mode ..... Shunjiro Ikezawa and Yoshiharu Nakamura 1677
O Plasma Density Increase Due to Transverse Energy Increase in Magnetic Mirrors ..... Hideo Kozima, Fumiko Tsuboi and Keiichiro Yamagiwa 1679
P The Bäcklund and Inverse Scattering Transform of the K-dV Equation with Nonuniformities ..... Ryogo Hirota 1681

No. 6

B Re-Appraisal of Neutron to Proton Ratio on the Surface of Nuclei ..... N. K. Rao, S. C. Gupta, T. Y. Singh and Y. Prakash 1683
C A New Group-Theoretical Derivation of the Bravais Lattices Masahiko Hosoya 1691
C Orientational Phase Transition in the System of Flexible Molecules ..... Hatsuo Kimura and Huzio Nakano 1695
C Theory of Order-Disorder Transition in Binary Alloy with Arbitrary Mole Fraction. I. Case of b.c.c. Type Lattice ..... Makoto Ueda and Huzio Nakano 1701

C Nematic-Smectic Transition in an Aligned Rod System ..... Masahito Hosino, Huzio Nakano and Hatsuo Kimura 1709
C H Comprehensive Tabulation of the Four Categories of Ferroic Point Groups Derived from Each of the 31 Prototype Point Groups ..... Kêitsiro Aizu 1716
E Sidebands on EPR Lines in Copper Benzoate ..... Kazukiyo Nagata and Kiichi Okuda 1726
E Magnetic Properties of Fe_3Pt Invar Alloy ..... Terufumi Sasaki and Soshin Chikazumi 1732
E Magnetic Properties of Solid Solution $Co_xFe_{1-x}Cl_2 2H_2O$ ..... Fumitaka Matsubara and Sakari Inawashiro 1740
E Relaxation of the Field-Induced Spin Reorientation in $ErCrO_3$ ..... Tadataka Morishita 1748
E D F Effect of Spin Fluctuations on the Specific Heat in βMn Metal and Alloys ..... Takashi Shinkoda, Ken-ichi Kumagai and Kunisuke Asayama 1754
E F Local Environment Effect on the Atomic Magnetic Moment in Ferromagnetic Transition-Metal Alloys. I ..... Noriaki Hamada 1759
E F I Effect of Spin Fluctuations on the Ultrasonic Attenuation in Itinerant Electron Systems with Helical Spin Structures ..... Kenji Makoshi 1767
F Ordered Structures of Interstitial Solutes in BCC Lattice ..... Takeshi Moriya and Hiromitsu Ino 1776
G Electrical Conduction Mechanism in Semiconducting $KTaO_3$ ..... Masayuki Tsukioka, Junzo Tanaka and Yasuto Miyazawa 1785
G K Infrared Study of Surface Phonon Modes in Small ZnO Crystals ..... Keiichi Yamamoto, Kazuo Ueda, Masayoshi Yamada and Kenji Abe 1792
G K Lattice Dielectric Constant of p-PbTe in the Far-Infrared Region ..... Kei-ichiro Shimizu, Yosio Nisida and Shin-ichiro Narita 1797
H ^{87}Rb NMR in Ferroelectric $RbH_3(SeO_3)_2$ ..... Takehiro Takoshima, Masaru Kasahara and Itaru Tatsuzaki 1804
H L Domain Formation in Ferroelectric $BaTiO_3$ Studied by X-Ray Topography. II ..... Mieko Takagi, Noriyuki Akaba and Shigeo Suzuki 1811
I Effect of Long-Wavelength Fluctuations on Ion Mobility in Fluid ..... Sachio Watanabe 1819
I Mixed Conduction in AgCuSe ..... Shin-ya Miyatani, Yuichi Miura and Hirokazu Ando 1825
I C Diffusion of Positive Muon in Pure Iron. I. Quantum Diffusion ..... Syuso Fujii 1833
I C Diffusion of Positive Muon in Pure Iron. II. Spin Relaxation ..... Syuso Fujii 1843
J The Nonregistered-Registered Phase Transition of Rare Gas Monolayers Adsorbed on Graphite ..... Hiroyuki Shiba 1852
J K Trapped Electron Centers and Trapped Hole Centers in Heavily Doped KCl: Tl. I. Thermal Glow Study ..... Yasuko Toyotomi and Ryumyo Onaka 1861
J K Trapped Electron Centers and Trapped Hole Centers in Heavily Doped KCl: Tl. II. ESR Study ..... Yasuko Toyotomi and Ryumyo Onaka 1869
K Chromium Concentration Dependence of Absorption and Photoluminescence Spectra in $CdIn_2S_4$: Cr ..... Masakazu Ueno 1877
K G Raman Spectra for Eu Doped Ln_2O_2S Phosphors ..... Shigeru Yokono, Syunji Imanaga and Teruhiko Hoshina 1882
K H Temperature Effects on the Doublet Structure of the 5.76 eV Absorption Band in Tl-Doped KDP Single Crystals ..... Ikuo Fujita 1889
N Excluded Volume Effect and Transitional Phenomenon in Dilute Polymer Solution. Viscometric Study ..... Kenji Shinozaki, Tatsuo Morita and Akio Chiba 1894
N M Study of Complex Coacervation in Low Concentration by Virial Expansion Method. I. Salt Free Systems ..... Kei-ichi Tainaka 1899
O Propagation of Ion Acoustic Cnoidal Wave ..... Kimiaki Konno, Teruo Mitsuhashi and Yoshi-Hiko Ichikawa 1907
O P The Limit Shock Waves in a Plasma ..... Isamu Nakata 1915
P Second-Order Thermal Boundary Layer in Liquid Metals ..... M. Arunachalam and N. R. Rajappa 1920
P An Exact Solution to "Simple Harmonic Generation" ..... Ryogo Hirota 1927
P Two-Dimensional Slow Viscous Flow Due to the Motion of a Cylinder on the Center-

Line of a Wedge ..... Moon-Uhn Kim 1929
P Visualization of Separating Stokes Flows ..... Sadatoshi Taneda 1935

ERRATA

Multiplet Structure in X-Ray 3p-Shell Photoelectron Spectra of Chromium Compounds [42(1977) 1949] ..... Tsuyoshi Yamaguchi and Satoru Sugano 1943
Ultrasonic Study of Dynamic Behavior of Jahn-Teller Distorted Cr^{2+} Centers in GaAs [46(1979) 84] ..... Hiroshi Tokumoto and Takehiko Ishiguro 1943

LETTERS

D Susceptibility Fluctuation in Superconducting First Stage Potassium Graphite Intercalation Compound near Transition Temperature ..... Mototada Kobayashi and Ikuji Tsujikawa 1945
E Temperature Dependence of Magneto-Electric Effect of Magnetite (Fe_3O_4) at about 10 K ..Yoshiko Miyamoto, Michio Ariga, Akira Ōtuka, Etsurō Morita and Sōshin Chikazumi 1947
E Effect of Low-Symmetric Spin Distribution on EPR Lines in One-Dimensional Magnetic Systems ..... Yuhei Natsume, Fumiyoshi Sasagawa, Masaki Toyoda and Isao Yamada 1949
E Nonlinear Magnetization at the Spin Glass Phase Transition Temperature ..... Yoshihito Miyako, Susumu Chikazawa, Toshiaki Saito and Y. G. Yuochunas 1951
E K On the Site Symmetry of Co^{2+} in $CdIn_2S_4$ ..... N. Graber, H. J. Wagner and C. F. Schwerdtfeger 1953
F C An Influence of Intra-Atomic Coulomb Interaction on Band Type of Jahn-Teller Effect in V_3Si ..... Hideaki Kasai, Sasuke Miyazima and Ayao Okiji 1955
H Brillouin Scattering study of the Paraelectric-Incommensurate Phase Transition in K_2SeO_4 ..... Toshirou Yagi, Masanori Cho and Yoshikazu Hidaka 1957
H L Field Induced Ferroelectric Phase in $RbLiSO_4$ ..... Sigetosi Tanisaki, Yoshihiro Shiroishi and Shozo Sawada 1959
J Isochronal Annealing Effects on the Yield Stress of Electron-Irradiated Copper Single Crystals ..... Isao Yoshizawa, Koji Kamada and Hiroshi Naramoto 1961
O Propagation of Intense Pulsed Ion Beams across a Magnetic Field ..... Keiichi Kamada, Chiharu Okada, Takashi Ikehata, Hiroshi Ishizuka and Syoichi Miyoshi 1963
P A Generalization of Inverse Scattering Method ..... Miki Wadati, Kimiaki Konno and Yoshi-Hiko Ichikawa 1965